

SI 22633



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

4.5NR-OH
Job Sheet OH184504



Part No: 4.5NR-OH

Job Qty: 1 ea

Part Name: Nubbins Receiver Hook



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 10/10/18

Job Tracking No: RA469

Due Date: 10/24/18

Created By: Michelle Gagnon-Donovan

Type: Rework - OH

SN:3282-01 - ELECTRICAL

Description: WIRES AT LEAST 20CM
LONGER THAN NORMAL

Note: DWG OM & OOPM-4.5NR Rev. 5 IPP Rev. A 18.05.01 new issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Start up Operation	1 Ea		10/24/18	0.00	0.00	Start Up Small Fab-4		18.10.30
110	Small Fab	1 pcs		10/24/18	0.00	1.00	Small Fab-9		
120	QC	1 pcs		10/24/18	0.00	0.00	QC5		
121	Outsource	1 pcs		10/24/18			SKY002-VC	5	OCT 30 2018
122	Packaging	1 pcs		10/24/18	0.00	0.00	Packaging2	8PCS	OCT 31 2018
123	QC	1 pcs		10/24/18	0.00	0.00	QC6		38
130	Customer Acceptance	1 pcs		10/24/18	0.00	0.00			38
140	Outsource	1 pcs		10/24/18			SKY002-VC	U/A PD	NOV 10 2018
150	Packaging	1 pcs		10/24/18	0.00	0.00	Packaging2	8PCS	NOV 10 2018
160	QC	1 pcs		10/24/18	0.00	0.00	QC5		38
170	Small Fab	1 pcs		10/24/18	0.00	1.00	Small Fab-9		AP 9-89
180	QC	1 pcs		10/24/18	0.00	0.00	QC5		DAS 50
185	DC	1 pcs		10/24/18	0.00	0.00	DC		21 NOV 2 2018
190	Packaging	1 pcs		10/24/18	0.00	0.00	Packaging3-2		21 NOV 2 2018
200	QC21-FG	1 Ea		10/24/18	0.00	0.00	QC21		21 NOV 2 2018

Part Op 110 - TEST ASSEMBLY. DISASSEMBLE ASSEMBLY. INSPECT DAMAGE PART.

Descriptions: 170 - RE-ASSEMBLE. ***All assembly to be done in accordance with manual*** TEST ASSEMBLY. (OH KIT LIST



Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S122633



Part: 4.5NR

Job No: OH184504

Serial No/Batch: 3282-01

Revision: 5

Inspector:

Exp Date:

Instructions:

Date: 10/30/18

NR REV.5***

121 outsource - P0041513

140: P0041595

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
4.5NR-AR	Nubbins Receiver Hook	1 pcs (1 ea)	100-Start up Operation	
188-FPSS-1032-1/4	Set Screw	2 Ea (2 ea)	170-Small Fab	5110495
4.5NR-10	Lock Roller Pin	1 Ea (1 ea)	170-Small Fab	5103919
4.5NR-13P	Lock Bearing Screw	1 pcs (1 ea)	170-Small Fab	5029121
4.5NR-15P	Lock Bearing	1 pcs (1 ea)	170-Small Fab	5029123
4.5NR-17P	Lock Bushing	1 pcs (1 ea)	170-Small Fab	5029125
4.5NR-20P	Load Stop Bushing	2 pcs (2 ea)	170-Small Fab	5029133
4.5NR-23P	Load Stop Back Bumper	1 pcs (1 ea)	170-Small Fab	5029134
4.5NR-24P	Load Stop Front Bumper	1 pcs (1 ea)	170-Small Fab	5029135
4.5NR-30P	Solenoid Cover Screw	2 pcs (2 ea)	170-Small Fab	5029140
4.5NR-35P	Latch Bushing	2 pcs (2 ea)	170-Small Fab	5029144
4.5NR-36P	Latch Spring	2 pcs (2 ea)	170-Small Fab	5118701
4.5NR-39P	Keeper Spring	1 pcs (1 ea)	170-Small Fab	5029177
4.5NR-46P	Lever Bushing	1 pcs (1 ea)	170-Small Fab	5029154
4.5NR-52P	Keeper Bushing	1 pcs (1 ea)	170-Small Fab	5029157
4.5NR-7P	Lifter Bushing	2 pcs (2 ea)	170-Small Fab	5029162
4.5NR-9P	Lifter/Load Stop Spring	2 pcs (2 ea)	170-Small Fab	5113653
AN6-13A	Bolt	6 Ea (6 ea)	170-Small Fab	5113852
AN6-14A	Machine Bolt 3/8-24 X 1.58 - Steel	2 Ea (1 ea)	170-Small Fab	5071829
AN6-24A	Hex Bolt 3/8-24 X 2 1/2"	1 Ea (1 ea)	170-Small Fab	5071830
AN6-40A	3/8-24 Bolt X 3" Long	1 Ea (1 ea)	170-Small Fab	5041108
AN7-24A	Bolt	1 Ea (1 ea)	170-Small Fab	5071831
AN7-40A	Bolt	1 Ea (1 ea)	170-Small Fab	5101840
C45-10-1P	Lock Spring Pin	1 pcs (1 ea)	170-Small Fab	5029293
C45-13-2P	Teflon Keeper, Spacer	2 pcs (2 ea)	170-Small Fab	5029305
C45-3-2-1P	Snap Ring	2 pcs (2 ea)	170-Small Fab	5097898
C45-3-4-1P	Retaining Ring	2 pcs (2 ea)	170-Small Fab	5114803
C45-3-5P	Teflon Spacer	2 pcs (2 ea)	170-Small Fab	5097745
MS21044N6	Nut, Self-Lock .375-24, UNJF-3B	1 Ea (1 ea)	170-Small Fab	5099740
MS21044N7	Keeper Nut	2 Ea (2 ea)	170-Small Fab	5100411
MS21083N3	Nut	4 Ea (2 ea)	170-Small Fab	5082938
MS21083N6	Nut	1 Ea (1 ea)	170-Small Fab	5076012
NAS1149F0332P	Washer	2 Ea (2 ea)	170-Small Fab	5103666-2
NAS1149F0632P	Washer	6 Ea (2 ea)	170-Small Fab	5048294
NAS1149F0663P	Washer	9 Ea (9 ea)	170-Small Fab	5051477-2
NAS1149F0763P	Washer	4 Ea (4 ea)	170-Small Fab	5078169

4.5NR-6	SIDE PLATE	1		5101545
4.5NR-25	SIDE PLATE SELENOID	1		5103403
4.5NR-14	LOCK ROLLER	1	E	5029122
4.5NR-27	SELENOID	1		5121274
4.5NR-10	LOCK ROLLER PIN	1	E	5029119
C10-7	LOCATING PIN	2		5101825
4.5NR50P	LIFTER PIN	1	E	5029156
C10-7	LOCATING PIN			
4.5NR-43	LEVER	1		5121261
M27500-16TG2T14	WIRE	2		5075144

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Start up Operation	4.5NR	1	0	0
170-Small Fab	188-FPSS-1032-1/4	2	247	0
	4.5NR-10	1	4	0
	4.5NR-13P	1	3	0
	4.5NR-15P	1	2	0
	4.5NR-17P	1	19	0
	4.5NR-20P	2	11	0
	4.5NR-23P	1	7	0
	4.5NR-24P	1	8	0
	4.5NR-30P	2	7	0
	4.5NR-35P	2	4	0
	4.5NR-36P	2	2	0
	4.5NR-39P	1	44	0
	4.5NR-46P	1	76	0
	4.5NR-52P	1	5	0
	4.5NR-7P	2	18	0
	4.5NR-9P	2	0	0
	AN6-13A	6	81	0
	AN6-14A	1	6	0
	AN6-24A	1	6	0
	AN6-40A	1	109	0
	AN7-24A	1	6	0
	AN7-40A	1	34	0
	C45-10-1P	1	42	0
	C45-13-2P	2	22	0
	C45-3-2-1P	2	329	0
	C45-3-4-1P	2	0	0
	C45-3-5P	2	82	0
	MS21044N6	1	79	0
	MS21044N7	2	36	0
	MS21083N3	2	184	0
	MS21083N6	1	136	0
	NAS1149F0332P	2	2,943	0
	NAS1149F0632P	2	438	0
	NAS1149F0663P	9	665	0
	NAS1149F0763P	4	180	0

Part Specifications

Specifications could not be found.

GREASE AEROSHELL NO.7 (M138724)
 LOCTITE 620 (M138933)
 SAF-T-EZE (M128063)
 LOCTITE 242 (M138933)

Plex 10/10/18 3:20 PM Dart.Gagnon.Michelle

Inspection Sheet Complete

RA469

Customer QA Ref #

0

Part Number	Batch / Serial #	Quantity	Part Complete	Rev/CHG Current	New Paperwork	New Labels	Disposition	Work order #	Work order instructions
4.5NR	3282-01	1	☒ Yes	☐ Yes	☐ Yes	☐ Yes	CUSTOMER SUPPLIED	S117068	Overhaul + electrical wires at least 20cm longer than usual since we need this to properly route the wiring in the frame were the two nubbin receivers are mounted.
4.5NR	M897-01	1	☒ Yes	☐ Yes	☐ Yes	☐ Yes	CUSTOMER SUPPLIED	S117069	Overhaul + electrical wires at least 20cm longer than usual since we need this to properly route the wiring in the frame were the two nubbin receivers are mounted.
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			
0		0	☐ Yes	☐ Yes	☐ Yes	☐ Yes			

QC Approval: _____ 0

Date: 0-Jan-00 _____



Overhaul Incoming Inspectio

4.5 NR Cargo Hoo

Customer

OH184504 / RA469

Date

2018/10/16

Part Number

Serial Number

3282-01

Additional Recomendated Replacement Parts

Part Number to Replace

Customer Approval

4.5 NR-14 LOCK ROLLER

☐

4.5 NR-6 SIDE PLATE

☐

4.5 NR-25 SIDE PLATE SELENOID

☐

4.5 NR-27 SELENOID

☐

4.5 NR-10 LOCK ROLLER PIN

☐☐☐☐☐☐

Inspected By

ALAIN PATRY



DATE: 2018/10/30

N.D.T

MODEL: 4.5 NR

S/N : 3282-01

Job : OH184504

RA.# RA469

P/N	DESCRIPTION	QUANTITY
4.5NR-18	LOAD STOP	1
4.5NR-40	KEEPER	1
4.5NR-8	LIFTER	1
4.5NR-12	LATCH	1
4.5NR-41	LATCH ROLLER	1
4.5NR-16	LOCK	1
4.5NR-8	LIFTER	1
4.5NR-45	KEEPER LATCH ROLLER PIN	1

ALAIN PATRY



1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19

1-18-19



1-18-19



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041513**

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO041513
PO Date: 10/30/18
Due Date: 11/2/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Phone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	183453	D4884-1	End Fitting, Eye : Various STC's ISSUE P/O	Firmed	-	11/2/18	4 pcs	0 pcs	4 pcs	\$22.25/pcs	\$89.00
Line Item Note ** rush **											
2	OH184505	4.5NR-OH	Nubbins Receiver Hook	Firmed	-	11/2/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
Line Item Note **RUSH**											
	OH184504			Firmed	-	11/2/18	1 pcs	0 pcs	1 pcs	\$178.00/pcs	\$178.00
Sub Total:							2	0	2		\$356.00
Grand Total:											\$445.00

DAS
38
9-89



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO041513

Order Notes

Procurement Quality Clauses

A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 10/30/18 10:09 AM dart.tsimiklis.chrisoula

**skyservice****Work Order Traveler**
Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO38002	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO041513
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

Work Required:

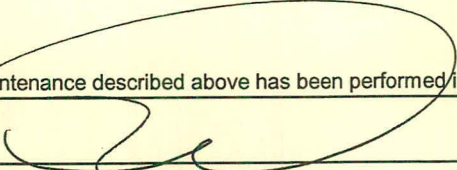
CARRY OUT NDT ON:

4 END FITTINGS , P/N# D4884-1 , J/S# 183453

2 NUBBINS RECEIVER HOOK, P/N# 4.5NR-OH , J/S# OH184504 , OH184505

Action Taken:		Date:	Initial/Stamp:			
LPI & MPI C/O IAW ASTM E-1417 AND 1444 REV. 16 ***NO CRACK FOUND*** MAGBENCH S/N 208123 CAL DUE: 5-APR-2019 POWDER 14A BATCH# MPO13600 CARRIER II BATCH# MPO20165 PEN ZL-37, MPO13139, CLEANER SKC-S MPO15030, EMU. MPO15896, DEV. MPO15030, UV LIGHT M-20142		OCT 30 2018	 			
Description	Location	P/N	Qty	Batch	S/N Off	S/N On

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp 	Date: OCT 30 2018
Name: RAFIK MELIKIAN		



DATE: 2018/11/05

NICKEL PLATING

MODEL: 4.5 NR

S/N : 3282 -01

P/N	DESCRIPTION	QUANTITY
4.5NR-18	LOAD STOP	1
4.5NR-40	KEEPER	1
4.5NR-12	LATCH	1
4.5NR-16	LOCK	1
4.5NR-34	LOAD RAIL	2
4.5NR-3	LOAD STOP STIFFENER	2

ALAIN PATRY

2185
1902823

11-1-1902	11-1-1902
11-1-1902	11-1-1902
11-1-1902	11-1-1902
11-1-1902	11-1-1902
11-1-1902	11-1-1902
11-1-1902	11-1-1902
11-1-1902	11-1-1902

5-1-1902

11-1-1902



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041595**

Supplier: GRO002-VC
Group Altech
2455 Halpern
St Laurent
QC
H4S 1N9 Canada
Phone: 514-335-3666
Fax: 514-335-3868

PO No: PO041595
PO Date: 11/5/18
Due Date: 11/9/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Tsimiklis, Chrisoula

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 60
Freight Terms:
Special Comments: Please advise on pick-up date

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	OH184504	4.5NR-OH	Nubbins Receiver Hook -Issue P/O to GROUPE ALTECH: P/O -Nickel plate, QQ-N-290, Class 2, Grade E or F -Nickel Plate .0004- .0006 -Bake after plating -Certificate of Conformity is required	Firmed	-	11/9/18	1 pcs	0 pcs	1 pcs	\$120.00/pcs	\$120.00
	OH184505			Firmed	-	11/9/18	1 pcs	0 pcs	1 pcs	\$120.00/pcs	\$120.00
Sub Total:							2	0	2		\$240.00

Grand Total: \$240.00

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retension of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 11/7/18 9:49 AM dart.tsimiklis.chrisoula



Certificat de Conformité / Certificate of Compliance

(014189-1)

2455, Rue Halpern | Saint-Laurent | Québec | H4S 1N9
 Tel: 514-335-3666 Fax: 514-335-3868
 www.groupaltech.com

Bon de Livraison / Packing Slip

014189 - 1

Livré à / Ship to

DART AEROSPACE LTD
 1270 ABERDEEN STREET
 HAWKESBURY, ON, K6A1K7
 CANADA
 Tel.: 613-632-5200 Fax.:

Client / Customer:

DART AEROSPACE LTD
 1270 ABERDEEN STREET
 HAWKESBURY, ON, K6A1K7
 CANADA
 BUYER:

Date expédition Ship date		Créé Par Generated By	Transport / No de Compte Courier / Acc. No.	Bon de commande Client Customer Purchase Order No.				
09-Nov-2018		Aman		041595 ✓				
#Ligne Line#	No. de Série / # Pièce Part Number / Line Item Details Job # / Ref #	Description pièce(s)	CATG. U/M	Comm. /Ordered	Exp/ Shipped	Qté NC/ NC Qty	Qté Scrap/	À venir/ Back Order
1	4.5NR-OH ✓ Rev.	4.5NR-OH 01 -E-NIC STEEL 500 [E-NICKEL STEEL 500] 0.004 TO 0.006 THICK AND BAKE	E-NICKEL-200 CH	1	✓ 1	0	0	0
2	4.5NR-OH ✓ Rev.	4.5NR-OH 01 -E-NIC STEEL 500 [E-NICKEL STEEL 500] 0.004 TO 0.006 THICK AND BAKE	E-NICKEL-200 CH	1	✓ 1	0	0	0

Notes Additionnelles / Additional Notes

Epaisseur réelle
Actual Thickness
Inspecteur Qualité
Quality Inspector
Réçu par
Received By

Nous certifions que les pièces énumérées ci-dessus ont été traitées en conformité avec votre commande et vos spécifications et rencontrent les exigences.
 Notre responsabilité financière et légale ne sera pas supérieure au montant de la facture issue.

We hereby certify that the parts listed above have been process in accordance with your purchase order and specifications and are in conformance with your requirements.
 Our financial and legal responsibility will not be higher than the amount of invoice.



Remote Cargo Hook Test Form

4.5NR

Work Order OH 184504

Customer RA 469

Serial Number 3282-01

Date 2018/11/26

# of Releases	Load (Lbs.)	Release Method	Remarks	Result	Pass/Fail
1	11,250	Static Hold	Hold for two Minutes and reduce load to zero	N/A	PASS
10	2,250	Electircal, 25 volts	No "hang ups" permitted	N/A	PASS
2	4,500	Electircal, 22 volts	Current shall not exceed 4.5A	4.0 A	PASS
2	3,500	Electircal, 22 volts	Current shall not exceed 4.5A	4.0 A	PASS
2	2,500	Electircal, 22 volts	Current shall not exceed 4.5A	4.0 A	PASS
2	1,500	Electircal, 22 volts	Current shall not exceed 4.5A	4.0 A	PASS
2	500	Electircal, 22 volts	Current shall not exceed 4.5A	4.0 A	PASS
1	4,500	Electircal, 20 volts	Current shall not exceed 4.1A	3.9 A	PASS
1	4,500	Electircal, 28 volts	Current shall not exceed 5.7A	5.5 A	PASS
1	4,500	Manual		N/A	PASS
1	N/A	Solenoid Ohms	Shall not exceed 4.9-5.6 Ohms	5.5 Ω	PASS
1	N/A	Electircal Continuity	Across both wires	N/A	PASS

Test Conducted By: ALAIN PATRY

Technician

Signature: Sylvie Bouchet

QC 5 Small FAB / QA

Submit

1000
 1000
 1000

1000
 1000
 1000

1000
 1000
 1000
 1000
 1000
 1000
 1000
 1000
 1000
 1000
 1000

1000